

CLAIMS

1. A method of selecting an active base station for use during soft handover, the active base station being for receiving data from a plurality of user equipments, the method comprising:
- 5 determining the amount of data in the data buffer of each of the user equipments;
- 10 comparing the amount of data in the data buffers of the user equipments to obtain a relative indicator, the relative indicator indicating how full a user equipment's data buffer is in comparison to the data buffers of the other user equipments; and
- 15 selecting a base station as an active base station in dependence on the relative indicator.
2. A method according to claim 1, wherein the relative indicator is an indication of how full a user equipment's buffer is in comparison to the average.
- 20 3. A method according to claim 1, wherein the relative indicator is an indication of how full a user equipment's buffer is in comparison to the minimum.
- 25 4. A method according to any of the preceding claims, wherein a plurality of relative indicators are obtained for each user equipment.
- 30 5. A method according to any of the preceding claims, wherein the comparing step is carried out by the base station.
- 35 6. A method according to claim 5, further comprising the step of transmitting the or each relative indicator for each user equipment from the base station to that user equipment.

7. A method according to claim 6, wherein the step of selecting a base station is carried out by the user equipment.

5

8. A method according to any of claims 1 to 5, wherein the step of selecting a base station is carried out by a radio network controller.

10

9. A method according to any of the preceding claims, wherein a user equipment determines an amount of data in its data buffer and transmits an indication of the amount of data to the base station.

15

10. A method according to any of the preceding claims, wherein a user equipment sends to the base station an indication of the total amount of data to be sent, and the base station determines the amount of data in the user equipment's data buffer based on the indication of the total amount of data, and the amount of data already received by the base station from that user equipment.

20

11. A method according to any of the preceding claims, wherein a base station is selected as an active base station based on a history of the or each relative indicator.

25

12. A method according to any of the preceding claims, wherein a base station is selected as an active base station based additionally on a measure of radio channel conditions.

30

13. A method according to claim 12, wherein a base station is selected as an active base station based on a history of radio channel conditions.

35

14. A method according to any of the preceding claims, wherein the step of selecting a base station is carried out by the user equipment, and the method
5 further comprises transmitting an indication of the selected base station from the user equipment to the base stations.

15. A method according to any of the preceding
10 claims, further comprising scheduling uplink transmissions in dependence on the or each relative indicator.

16. A method according to claim 15, wherein each
15 user equipment determines a rate and/or time at which it transmits data to the base station based on the or each relative indicator for that user equipment.

17. A base station for receiving data from a
20 plurality of user equipments, the base station comprising:

means for determining the amount of data in the data buffer of each of the user equipments;

means for comparing the amount of data in the data
25 buffers of the user equipments to obtain a relative indicator, the relative indicator indicating how full a user equipment's data buffer is in comparison to the data buffers of the other user equipments;

means for transmitting the relative indicator;

30 means for receiving a signal indicating whether the base station has been selected as an active base station for a user equipment; and

means for allocating a channel to the user equipment if the base station has been selected as an
35 active base station.

18. A base station according to claim 17, wherein the relative indicator is an indication of how full a user equipment's buffer is in comparison to the average.

5

19. A base station according to claim 17, wherein the relative indicator is an indication of how full a user equipment's buffer is in comparison to the minimum.

10

20. A base station according to any of claims 17 to 19, wherein the comparing means is arranged to produce a plurality of relative indicators for each user equipment.

15

21. A base station according to any of claims 17 to 20, wherein the transmitting means is arranged to transmit the or each relative indicator for each user equipment from the base station to that user equipment.

20

22. A base station according to any of claims 17 to 20, wherein the transmitting means is arranged to transmit the or each relative indicator to a radio network controller.

25

23. A user equipment comprising:

a data buffer;

means for transmitting to a base station information concerning an amount of data to be

30

transmitted;

means for receiving from a base station a relative indicator, the relative indicator indicating how full the data buffer is in comparison to the data buffers of other user equipments served by that base station; and

35

means for selecting the base station as an active base station based on the relative indicator.

24. A user equipment according to claim 23,
further comprising means for determining the amount of
data in the data buffer, wherein the information
5 concerning an amount of data to be transmitted is an
indication of the amount of data in the data buffer.

25. A user equipment according to claim 23,
further comprising means for determining an amount of
10 data to be transmitted in a call, wherein the
information concerning an amount of data to be
transmitted is an indication of the amount of data to
be transmitted in the call.

15 26. A user equipment according to any of claims
23 to 25, wherein the receiving means is arranged to
receive a plurality of relative indicators from a base
station.

20 27. A user equipment according to any of claims
23 to 26, further comprising means for storing a
history of the or each relative indicator, wherein the
selecting means is arranged to select a base station as
an active base station based on a history of the or
25 each relative indicator.

28. A user equipment according to any of claims
23 to 27, wherein the selecting means is arranged to
select a base station as an active base station based
30 additionally on a measure of radio channel conditions.

29. A user equipment according to claim 28,
further comprising means for storing a history of radio
channel conditions, wherein the selecting means is
35 arranged to select a base station as an active base
station based on a history of radio channel conditions.

30. A user equipment according to any of claims 23 to 29, further comprising means for transmitting an indication of the selected base station.

5

31. A user equipment according to any of claims 23 to 30, further comprising means for scheduling uplink transmissions in dependence on the or each relative indicator.

10

32. A user equipment according to claim 31, wherein the scheduling means is arranged to determine a rate and/or time at which data is to be transmitted to the base station based on the or each relative indicator.

15

33. A communications system comprising a base station according to any of claims 17 to 22 and a user equipment according to any of claims 23 to 32.

20